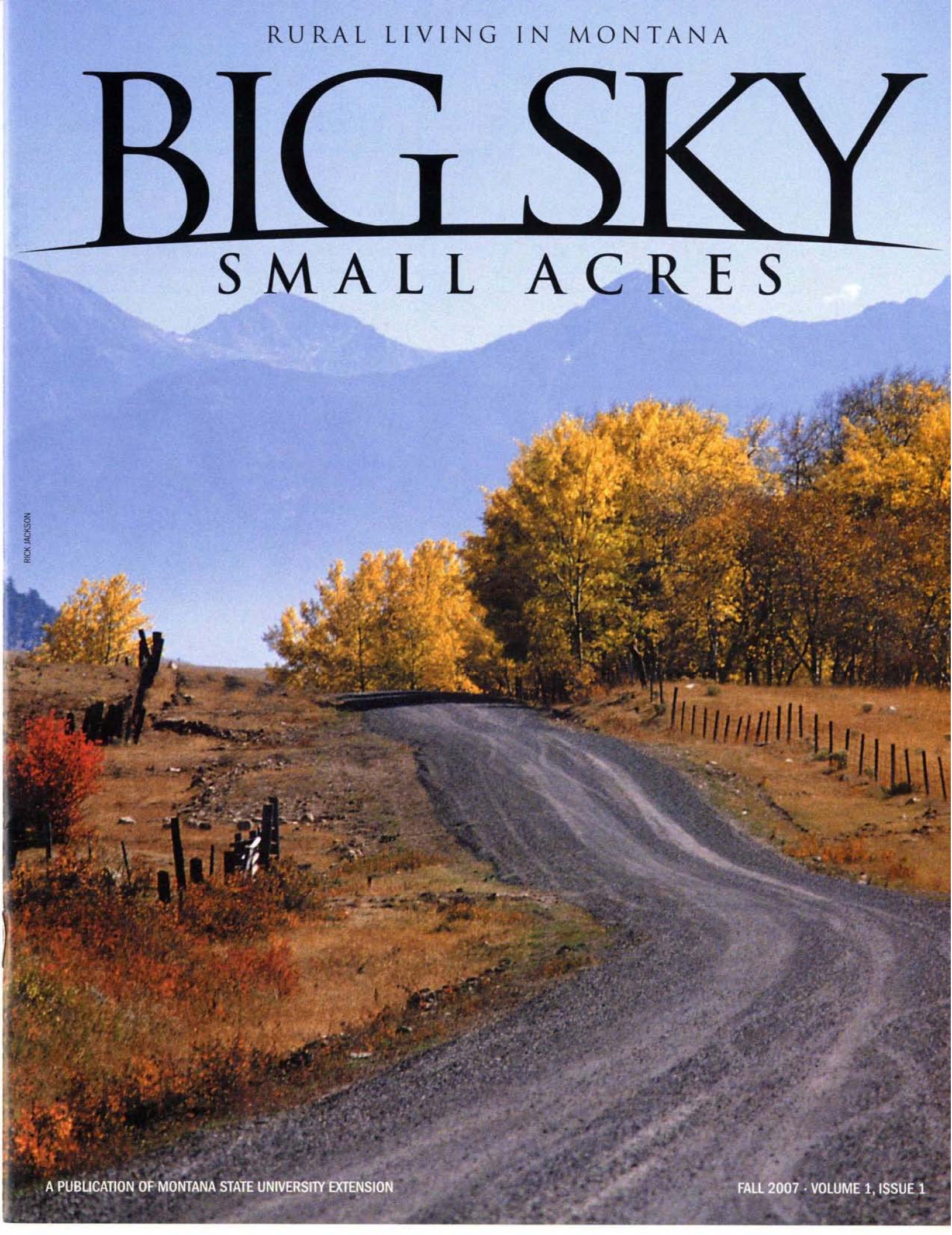
RURAL LIVING IN MONTANA

BIG SKY SMALL ACRES



RICK JACKSON

A PUBLICATION OF MONTANA STATE UNIVERSITY EXTENSION

FALL 2007 · VOLUME 1, ISSUE 1

BIG SKY SMALL ACRES

definitions

by Robert Moler, NRCS-Montana

AQUIFER An aquifer is commonly known simply as ground water. A more formal definition offered by Webster's Dictionary is: "A water-bearing stratum of permeable rock, sand, or gravel." Aquifers are often accessed for drinking water, irrigation and many other uses. Aquifers are replenished as water from the surface filters down through the soil or rock.

BIENNIAL PLANT A biennial plant completes its life cycle in two years. The first year it produces leaves and stores food. The second year it produces fruits and seed. (NRCS Plant Materials Program Glossary of Terms, http://plant-materials.nrcs.usda.gov/pubs/idpmctn280101.pdf)

FORAGE Edible parts of plants, other than separated grain, that can provide feed for grazing animals, or that can be harvested for feeding. (The Forage Information System, http://forages.oregonstate.edu/)

FORBES Any non-woody plant that is not a grass, sedge or rush. (NRCS Plant Materials Program Glossary of Terms, http://plant-materials.nrcs.usda.gov/pubs/idpmctn280101.pdf)

GRAZING Grazing is the act of livestock and wildlife eating plants. Ranchers take into consideration the capacity for plants to support animals when planning when and how long to graze their lands. For information about how to graze your land in order to maximize the health of both plants and animals, contact your MSU County Extension agent or NRCS conservationist. Wildlife biologists may further differentiate animal feeding into grazing or browsing where grazers typically consume grass and browsers typically consume shrubs.

INVASIVE SPECIES A species that does not originate in a particular area, demonstrates rapid growth and spread, and displaces other species. These species are often prolific seed producers, have high seed germination rates, and are easily propagated. Invasive species have the added advantage of being relatively free from predators (herbivores, parasites and disease) and can therefore expend more energy for growth and reproduction. Invasive species should not be confused with "Introduced Species." (NRCS Plant Materials Program Glossary of Terms, http://plant-materials.nrcs.usda.gov/pubs/idpmctn280101.pdf)

NATIVE SPECIES A native plant species is one that occurs naturally in a particular area. The factors that determine its presence in an area include climate, soil and biology. Synonyms of native include "indigenous," "endemic," and "aboriginal." (NRCS Plant Materials Program Glossary of Terms, http://plant-materials.nrcs.usda.gov/pubs/idpmctn280101.pdf)

PERENNIAL A plant that lives more than two years. (NRCS Plant Materials Program Glossary of Terms, http://plant-materials.nrcs.usda.gov/pubs/idpmctn280101.pdf)

RIPARIAN AREA An area where the land meets the water. Typical examples would include floodplains, streambanks, lakeshores and wetlands. Riparian areas may exist within any land use area, such as cropland, hayland, pastureland, rangeland and forestland.

Although riparian areas are only a fraction of the total land area of Montana, they are generally more productive in terms of plant and animal species, diversity and biomass than adjacent uplands.

Find more information about riparian areas on the NRCS Web site at www.mt.nrcs.usda.gov/technical/ecs/water/setbacks/index.html.

WATER QUALITY Water Quality is a term used to describe the biological, chemical and physical characteristics of water and its general composition. These factors affect water's ability to sustain life and its suitability for human and livestock consumption.

WEED A plant that is not valued where it is growing and is usually of vigorous growth; especially one that tends to overgrow or choke out more desirable plants. (Webster's Dictionary)

In Montana most weeds fall into one of two categories: noxious or nuisance. Noxious weeds are defined by the Montana County Weed Control Act as "plants of foreign origin that can directly or indirectly injure agriculture, navigation, fish or wildlife, or public health." Currently there are 27 weeds on the statewide noxious weed list that infest about 8.2 million acres in Montana, causing ecological as well as economic damage. Landowners, whether private, municipal, county, state or federal, are required by law to take steps to control noxious weeds on their property. Learn more about weeds classified as noxious in Montana and weed control requirements at the Montana Department of Agriculture Web site http://agr.mt.gov/ or the Montana Weed Control Association Web site at http://mtweed.org/

Weeds that are not classified as noxious are a nuisance to landowners. These weeds may be native plants that are simply unwanted in certain areas. While there are means to control these weeds, it is not required by law.

WEED CONTROL This is not necessarily a synonym for weed eradication. While eradication may be a long-term goal, benchmarks for weed control include awareness, prevention, identification, management and suppression.

After a weed infestation is identified, weed control steps are taken to prevent the spread of weeds and decrease the size of infestations. There are many methods that can be implemented to control weeds, including chemical, biological and mechanical. Any of these weed control methods can be applied individually; however, a more holistic approach is often much more effective. Under an Integrated Pest Management (IPM) plan, a combination of control methods is designed to manage weeds.

For more information about weed identification or control methods, contact your county weed supervisor or MSU Extension agent.

RURAL LIVING IN MONTANA

BIG SKY SMALL ACRES

Fall 2007 · Volume 1, Number 1

MONTANA STATE UNIVERSITY | EXTENSION

MONTANA DNRC · Gallatin Conservation District · NRCS

Montana Department of Environmental Quality · Montana Sheep Institute

TABLE OF contents

ISTOCKPHOTO.COM

WINTERIZING hayfield irrigation systems

(WHEEL LINE, HAND LINES)

We don't think too much about winterizing our hand line or wheel line irrigation systems other than shutting off the power to the pump. A little time spent in fall to put the system to bed for the winter will help assure a trouble free start up in the spring.

Much of the maintenance for wheel line systems is related to the single cylinder air-cooled engine and associated hydraulics, gears, and chain drive for moving the system. It is important to follow the engine manufacturers' recommendations for oil viscosity and change intervals and for air filter, spark plug, and other service requirements. The wheel-move manufacturers provide adequate operation and maintenance instructions to fit their particular drive system. It is important that the owner/operator read and be familiar with and follow the instructions that match the equipment he/she is using.

Lubricate chains and grease all fittings where appropriate. Be sure to secure the engine or mover cover to prevent loss during high winds. Check all nozzles and impact sprinklers for plugging, mismatched sizes, breakage, corrosion or other damage caused by wear or winter weather. Couplers and connections should be checked for leaks and repairs or replacements. It is a good practice to identify problem components at the end of the irrigation season and to have the replacement parts on hand for spring installation. If water leaks occur at joints or drain plugs during irrigation, check the gaskets and pipeline connections for wear or cracks and replace them as needed. Check and tighten the couplers and connectors as required.

Anytime the wheel line is empty, and particularly during the off season, it is essential that it be anchored to prevent wind damage. Often this is as simple as moving the system over to a fence and tying it down in three or four places to sturdy posts. Wind anchors are available which attach to the lateral pipe and act like a brace to prevent movement. Store your flexible connection pipe indoors if at all possible to limit premature weathering from sunlight and extreme temperature changes.

Hand line should be stored on a rack above the ground and at an angle to promote drainage. Valve handles and end plugs should be stored out of the weather. It is a good idea to loosen your valves slightly to minimize the effects of extreme temperature changes.

Adapted from Utah State Universtiy Extension Bulletin ENGR/BIE/WM/05 April 2000

MSU EXTENSION

Winterizing An Irrigation Pump

Special Thanks to Berkley Pumps

Proper preparation of the pumping system for extended periods of nonuse in freezing weather is important to preserving the system's performance and duty-life expectations. Investing a short amount of time and following the procedures below will enhance the pumping system's performance longevity.

General Preparation

- Disconnect power to pumping system before beginning any work. Ensure that winterized pump cannot be accidentally energized, and tape any exposed leads.
- Remove exterior dirt and grime or any substance that may trap moisture. Ensure motor vent screens are clear of debris.
- Flush suction and discharge lines. Check for leaks at this time and replace any worn gaskets.
- Drain pump housing by opening an air bleed valve or port plug on top of the pump volute and remove the port plug closest to the bottom of the volute.
- Flush pump with clean water to clear rust and debris that may have accumulated in the volute.
- Precaution must be taken to ensure exposed tank (s) (if applicable) and piping are also drained. Piping should be drained below the freeze line. A low pressure (5 psi), high-volume blower may be used to purge the system with air. (Note: Wet/Dry Shop-Vac may also be used for system drainage.)
- If pump is to be stored wet, do not use antifreeze solutions other than propylene glycol. Propylene glycol is nontoxic and will not damage plastic components that may be in the pump and/or pumping system. Use a 40 percent propylene glycol/60 percent water solution to protect the pump to -50°F.
- Lubricate bearings (refer to owner's manual).
- Keep unit clean and dry during storage period to guard against corrosion. Shelter pump from elements when possible.
- To avoid condensation and corrosion problems, do not wrap or seal pump with plastic. Air must be permitted to circulate around pump.
- Rotate driver shaft periodically to prevent freeze up of internal components and to keep bearings coated with lubricant to prevent oxidation and corrosion.
- If pump is packing-style, disassemble and hand-pack cavity with grease, then reassemble. Units equipped with flush tap may be serviced with grease gun.
- Seal all open ports, including conduit box, to keep out foreign objects such as insects, rodents, dust and dirt. Replace gasket in conduit box as necessary.
- Remove all suction piping from water reservoir (if applicable) to prevent freeze damage. ■

MSU EXTENSION

WINTERIZING A lawn irrigation system

by Joe Meek, Montana Department of Environmental Quality

Looking for something to do on one of those beautiful fall days of late-September or early October? Here's an idea that'll keep you out in the sunshine for a couple of hours while accomplishing some much needed work.

Before it gets too late in the fall and the risk of a long hard cold spell is looming, irrigation systems must be winterized. This entails completely draining the system to prevent damage to the system components caused by water freezing inside pipes, sprinklers and valves.

You can pay someone to do it for you, or do it yourself. Doing it yourself will save you some dollars, and after the first time, it shouldn't take you more than an hour or two to get the job done. This will allow you to go chase pheasants or sharptails in the afternoon. Plus, all that money you save can be put to other uses — like maybe a new shotgun, or even seed money for a winter trip to warmer climes.

Hiring it out

When contractors winterize a system they will use a fitting or "blow out connection" for attaching a compressed air hose just downstream of the vacuum breaker. The process is simple and pretty quick. After shutting off the water to the system, the contractor will attach the compressed air hose to the blowout connection, and a single zone at a time, blow out all the water. After the system is blown out, he or she drains the line between the vacuum breaker and the shut off valve.

Blowing out the system yourself

You may be able to do the job yourself, save a few dollars, and bask in the satisfaction of mastering yet another household system. But before you get started down the do-it-yourself road, make sure you have the tools and wherewithal to do it right. An incomplete job can lead to damage or even worse — personal injury.

You'll need access to a 25 CFM or larger compressor to follow the same procedure a contractor would use. A local rental center is a good source, and you can reduce costs by cooperating with any of your neighbors that are do-it-yourselfers. You will have to have a suitable connection for the air hose downstream of the anti-siphon device. Remember, there isn't much room for error here, a small mistake can ruin your system. Realistically consider your abilities before deciding to proceed because there's no shame in calling a professional. You don't want to over-pressure your system only to see sprinkler parts floating back to earth like ash from the recent summer fires.

An additional word of caution is warranted here — do not exceed 40 PSI of air pressure when blowing the system. Exceeding 40 PSI can result in severe equipment damage. And always wear eye protection!

ISTOCKPHOTO.COM

The steps for blowing out the system are pretty straightforward:

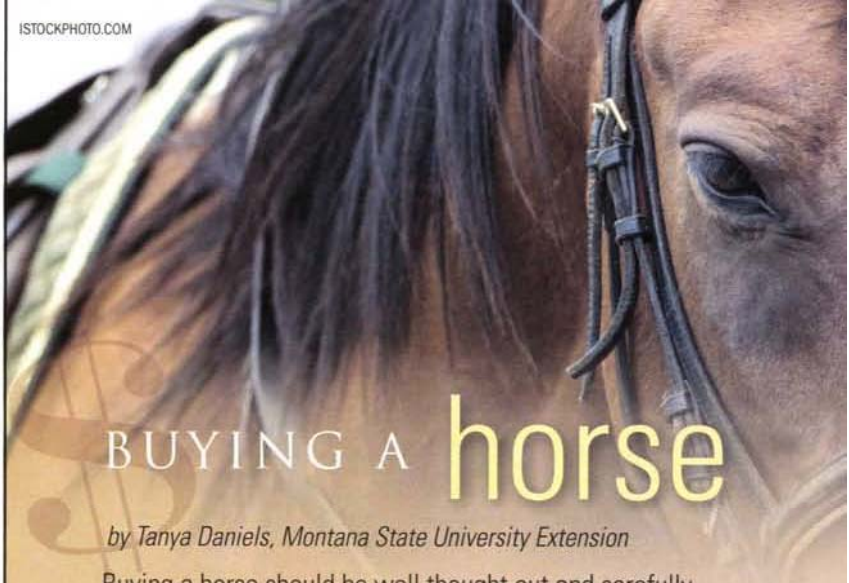
1. Shut off the main water supply valve.
2. Connect the air compressor to a fitting downstream of the main water supply valve and vacuum breaker. If you've got some drip line connected to your system, it is a good idea to open the end of the line(s).
3. With the air pressure applied, activate each automatic valve manually from the controller. Let each zone valve remain open until all water has been expelled from that zone. DO NOT blow the zone any longer than needed, usually two minutes is the maximum.
4. After all the valves and zones have been blown out, disconnect the air hose.
5. Open any drains that are installed between the main shut off and the valve manifolds.

You'll want to be patient in your approach. Using more pressure in an attempt to "git 'er done" is asking for trouble. A few more cautions are in order:

- Do not allow the air pressure to exceed 40 PSI.
- Do not attempt to increase air charge by filling the main line with all valves closed.
- Do not stand over any part of the system while it is pressurized with air.
- Do not leave the air compressor unattended.
- Do not blow the system out through the pump. First blow out the system, then drain the pump.
- Do not leave the manual drain valves open after the blow out.
- Do not leave the indoor drain open during the blow out.

Always consult your owner's manual before doing any maintenance on your system. If you don't have a manual, there are many online references available. It is advisable to search out winterization instructions specific for your type of system or specifically provided by the manufacturer of your system components. ■

For more information, contact Joe Meek, Montana Department of Environmental Quality, (406) 444-4806, jmeek@mt.gov



ISTOCKPHOTO.COM

BUYING A horse

by Tanya Daniels, Montana State University Extension

Buying a horse should be well thought out and carefully planned. Don't settle for less than you expect or more than you can handle. There are many happy horse owners. Satisfaction comes from knowing what you want and searching until you find it.

Horses are expensive to buy and to keep. There is a lot of time required for daily care, but the horse owner can get years of enjoyment and satisfaction from owning the RIGHT horse. The physical exercise and mental relaxation derived from owning the right horse can justify the expense. The relationship between a horse and rider can be unparalleled if the right horse is chosen.

There are many things to consider before buying a horse. How will the horse be used? What is the age and experience of the rider? What is the age and experience/training of the horse? How much can you afford to spend for a horse?

A horse should satisfy its owner for more than just a few weeks or months. To do this the horse must be capable of doing the things the rider wants it to. Few horses can do everything. The age, sex and training of the horse must be matched with what it will be expected to do. Specific use can greatly affect the cost of the horse. A rodeo champion may be too expensive for you, so you may have to adjust your interest to your budget.

A horse should be selected with a specific rider in mind. The age, ability and interest of the rider must be carefully matched to the horse. Untrained horses and untrained riders are not a good combination. Also, do not assume that an adult can handle a horse better than a youth, just because he or she is older. The breed or breed-type of horse you select should be based on your interests. Many breeds are suitable for pleasure riding, however, if you want to participate in western events, then you need to select a breed with the traits suited to these classes.

Prices of horses vary from nothing to thousands of dollars.

(continued on following page)

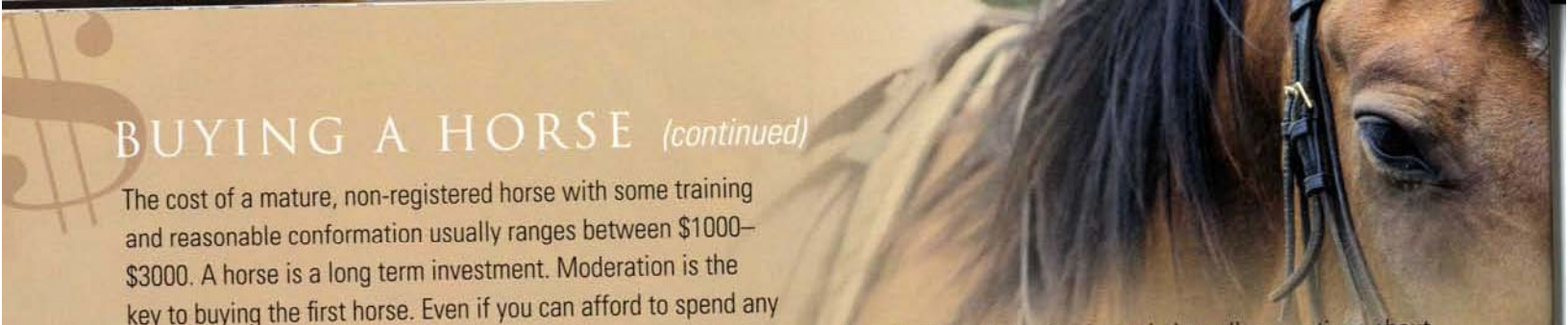
BUYING A HORSE *(continued)*

The cost of a mature, non-registered horse with some training and reasonable conformation usually ranges between $1000–$3000. A horse is a long term investment. Moderation is the key to buying the first horse. Even if you can afford to spend any amount of money on a horse, purchase one in a moderate price range. A better, more expensive horse can be purchased later if your interest and skills outgrow your initial horse. Many "cheap" horses make excellent mounts and provide opportunities for learning and fun for the rider.

The initial purchase price of the horse can be insignificant compared to the routine management costs of a horse. You must be prepared for the regular expenses that come with owning a horse. The largest expense to horse owners is feed and board. These expenses vary tremendously depending on the situation. If you have the facilities and the room to board the horse, then your costs will decrease noticeably. Other costs include health and farrier services, grooming aids, tack and equipment, and insurance.

Look at the horse's general appearance and behaviors. Look for sign of "cribbing" (chewing on the stall or corral) or kicking in the stall or pen the horse is kept in. Look for obvious disfigurements and balance. A horse that is bright, alert and responsive is ideal. Observe the horse's movement and attitude under saddle. The horse should be relaxed and attentive when being ridden. Examine the horse's head, neck, legs and topline for correct conformation.

View the horse's health records to be sure vaccinations have been kept current.



You should not be afraid to ask the seller questions about these and any other topics related to the horse. It is important to have a veterinarian conduct a pre-purchase examination. The safest way to buy a horse is to locate an honest seller and to take along an experienced person to help you. If possible, take the horse on a week's trial basis and buy the horse subject to passing the pre-purchase examination. Generally, you should avoid buying a horse that has "potential," at an auction, or that is listed as "green broke."

Be objective in your evaluation of the horses you are considering. If you have a doubt, look at more horses. Remember that no horse is perfect, but the horse you select should not have any faults that are dangerous to you or the horse. With patience and practice, minor problems can be worked out and you and your horse can become a winning combination. ■

For more information, contact Tanya Daniels, Montana State University Carbon County Extension, (406) 962-3522, tkd@montana.edu

Checklist When Shopping for a Horse

- ✓ Choose a riding discipline and look for a horse that fits.
- ✓ Choose a breed but be willing to look at others as well.
- ✓ Don't buy a horse because of his color or markings.
- ✓ Don't buy a stallion or stud.
- ✓ Set a price limit based on your regional price research.
- ✓ Focus on a suitable age horse and stick with it. A few years in either direction is ok but usually novices should avoid very young horses.
- ✓ Know in advance what you can sacrifice for cost.
- ✓ When looking at a prospect, know in advance what questions you need to ask.
- ✓ Attitude is very important in horses. Don't settle for a horse that isn't respectful or obedient.
- ✓ Look for responsiveness to the handler on the ground and a quiet disposition.
- ✓ Arrange a vet check and make sure your purchase is contingent on the confirmation that the horse is sound. Be realistic: older horses may have some defects.

MSU NEWS PHOTO, ERIN RALEY

NOXIOUS WEEDS: everyone's concern

by Lindsey Bona, Ravalli County Weed District

Montana is undergoing a lot of changes these days as population continues to grow and the dynamics in the West diversify. Most would agree that they love living in Montana for its natural beauty, recreation, hunting, fishing, and so much more. But, there is a change taking place in the state that is threatening these natural characteristics. The US Fish and Wildlife Service, the US Forest Service, World Conservation Union, the Nature Conservancy, the Bureau of Land Management and the National Park Service have all identified noxious weeds as one of the top environmental threats to our ecosystem, as well as one of the top land management goals for their agencies. Noxious weeds are having detrimental effects on numerous aspects of life here in Montana.

The Montana County Noxious Weed Control Law states that: "A noxious weed is an exotic plant which may render land unfit for agriculture, forestry, livestock, wildlife, or other beneficial uses or that may harm native plant communities." Plants are designated by the Department of Agriculture as state listed noxious weeds and by county noxious weed boards as county listed noxious weeds.

Noxious weeds in Montana are not just a nuisance. These weeds are having negative impacts on our economy and ecosystem. The consequences of noxious weeds are snowballing from smaller issues like poor aesthetics to larger ones such as greater wildfire potential. Montana's native plants, and threatened and endangered plants are being forced out by aggressive noxious weeds. The water cycle and nutrients cycles are also disrupted by noxious weeds. These weed infestations make poor habitat for wildlife. For example elk cannot survive on land that is infested by 50 percent or more of spotted knapweed. Several of the weeds listed by the state or counties can be toxic to animals and humans. Farmers and ranchers are being greatly impacted by the effects of noxious weeds. For folks that live off the land, weeds are causing them to reach deep into their pockets to manage infestation in hopes to keep their land productive, to the tune of $100 million each year. Land value can be decreased significantly for weed infested properties. Realtors and buyers are looking more and more at the presence of noxious weeds on property before committing to a purchase.

There are many different management options for weed control. In areas where weeds do not currently exist, prevention is the most important tool. Some of the best ways to prevent the spread of weeds are: avoid infested areas, use only weed seed free forage, wash vehicles after traveling in infested areas, check clothing and pets for seeds. In areas where infestations do occur there are a number of options in controlling weeds. Some ways to control weeds include: hand pulling, cultivation, revegetation, mowing, grazing, biological bugs or pathogens and herbicides. Some techniques work better on certain weeds than others. Integrated Weed Management, a technique use by weed management professionals, utilizes timing and a combination of the above techniques to control the spread of weeds. In all infested areas it is important to develop a management strategy for controlling the weeds.

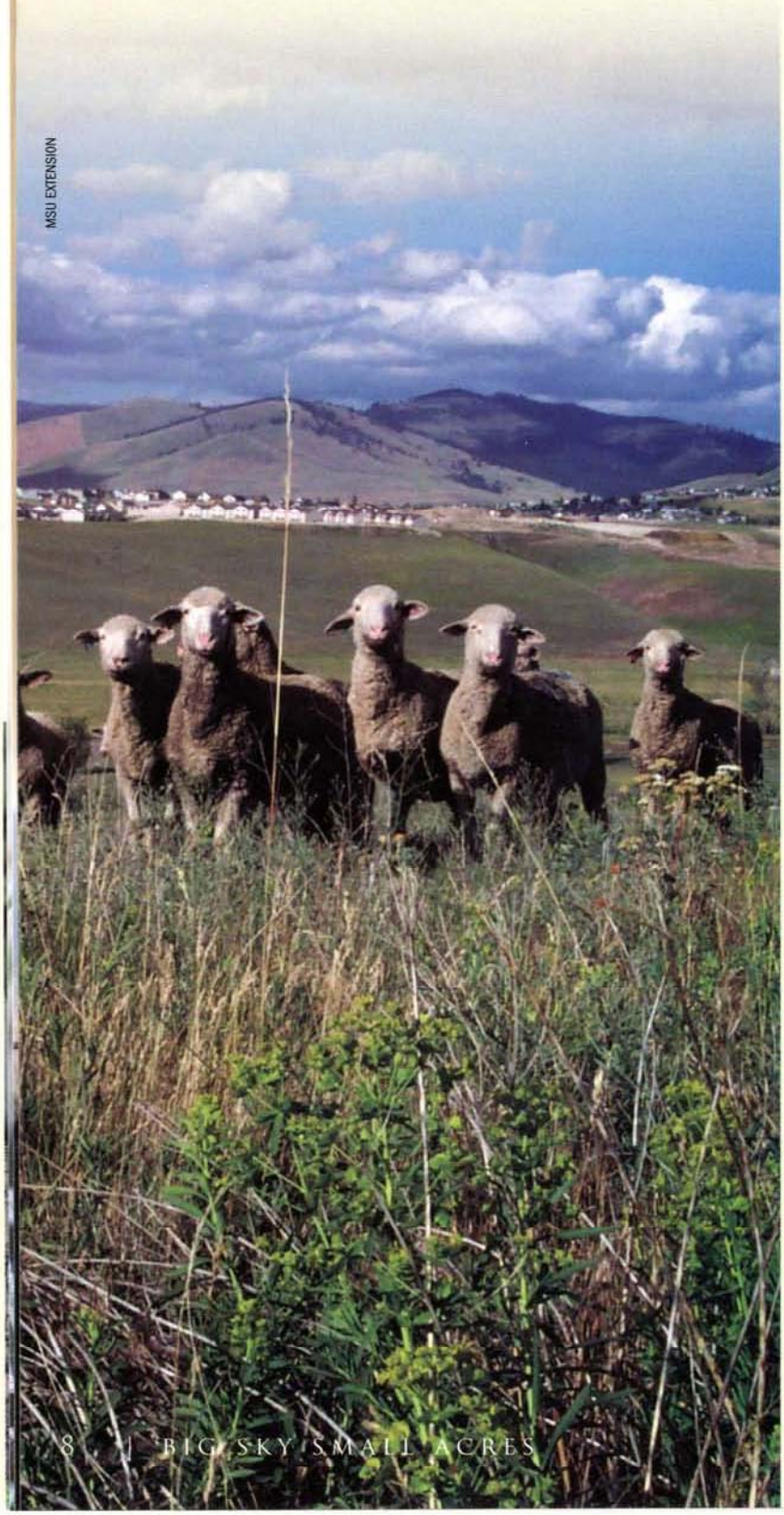
The most important tool a landowner can posses is knowledge. Educate yourself on what vegetation is growing on your property and what weed control methods will work best for you. Whether you own 5,000 acres or five acres you should be concerned with the effects noxious weeds are having on your property and Montana's landscape. These weeds are having serious impacts on animal's health, water quality, native plant communities, property values and aesthetics. It is every Montanan's responsibility to work together at managing noxious weeds. Contact your local county weed coordinator or MSU Extension agent for information on weed management in your area. For more information on noxious weeds in Montana, visit www.weedawareness.org. ■

For more information, contact Lindsey Bona, Ravalli County Noxious Weed Education Coordinator, (406) 777-5842, lindsey.bona@yahoo.com

FEATURED LANDOWNER:

Montana entrepreneur

by Lisa Surber and Melissa Griffiths



MSU EXTENSION

If you are driving along or fishing the Madison River south of Ennis, there is a strong possibility you may see a large flock (band) of sheep grazing peacefully near the river.

What are they doing? Why are they there?

These sheep are part of a pilot project designed to target spotted knapweed (*Centaurea maculosa*). Sheep owner, Riley Wilson, of Harrison, Montana, makes his living raising these wooly critters and using their talents for eating up weeds.

Wilson has been in the sheep business all of his life. He owns just 25 acres in southwestern Montana; however, he is able to own and manage a lot more sheep than his land can support because of the weed control opportunities he has found in Montana.

Sheep have long been used for weed control. In recent years, renewed interest in using sheep for vegetative management has made these wooly weed eaters a hot commodity. Grazing by sheep or goats stresses spotted knapweed, taxes its root system, reduces seed production, and increases its vulnerability to other control tools (such as biological control or herbicides). There are benefits of using biological control methods like sheep grazing. Sheep grazing is a safe and ecologically friendly method to help control invasive plants. It can also be an effective means to reduce the incident of wildfires. Overall, controlled sheep grazing can improve rangeland, riparian and watershed areas and wildlife habitat.

Riley runs about 600 sheep in his operation. He spends just a few short months on the acreage in Harrison in the winter and early spring, but most of the year, these sheep have grazing jobs to do around southwestern Montana. He utilizes adjacent hayfields, grain fields and crop residues, and is hired out by small landowners and homeowner's associations to graze in subdivisions. Riley is the owner and operator of Wooly Weed Eaters.

Wilson's Wooly Weed Eaters employs about 400 sheep from May through September to browse spotted knapweed leaves and buds before the plants can make viable seed. The sheep eat the weeds first because they naturally are attracted to forbs rather than grass. Wilson works closely with the Montana Sheep Institute on some of grazing jobs like the Madison River Pilot Project.

finds weed grazing niche

The Pilot Project

The Madison River Grazing Pilot Project began in 2004 and is located in Madison County, along an eight-mile stretch of the Madison River, from the McAtee Bridge to the South Madison Fishing Access. The project is a collaboration between the Madison Valley Ranchlands Group Weed Committee, Montana Sheep Institute, BLM, and Montana Fish, Wildlife and Parks. The project area includes public lands owned by the Bureau of Land Management and Montana Fish, Wildlife and Parks, as well as private parcels owned by approximately 29 different landowners. This stretch of the river is infested with spotted knapweed to varying degrees. The area treated with prescription sheep grazing is one-half mile on each side of the river, approximately 3,449 acres. River corridors are especially sensitive to chemical treatment of invasives and sheep grazing can provide a biological weed control solution. Sheep will readily consume spotted knapweed, and thus prescribed sheep grazing can be utilized as a tool to economically control invasive plants as part of an integrated weed management program.

This grazing pilot project directly affects the private landowners within the project area, the general public who utilize the public land within the project, the residents of the Madison Valley and members of the weed fighting community who benefit from the increased knowledge that comes from experimental projects such as this. In addition, land managers throughout the West may benefit from this project as it provides yet another tool in the arsenal to fight the on-going war on weeds, particularly because it can be safely used along waterways and in other environmentally sensitive areas where chemical use is less desirable. The livestock industry benefits as it highlights another real need for grazing animals, not only for sustenance, but also in this highly specialized manner for which there is increasing demand. This project is particularly valuable in the field of noxious weed research as it is one of the only projects in which 100% of the impact on weeds is performed by sheep. There is no cattle grazing within the project area, and this allows for a uniquely focused assessment of the impact that sheep alone have on spotted knapweed.

Controlled sheep grazing can be used to prevent the spread and reduce the density of spotted knapweed infestations, and will ultimately provide a long-term management tool that reduces the weed to tolerable levels.

Lisa Surber, a research scientist with the Montana Sheep Institute at Montana State University in Bozeman, can be reached at (406) 994-2093 or lmsurber@montana.edu. Melissa Griffiths, the weed coordinator with the Madison Valley Ranchlands Group, can be reached at (406)682-3731.

The Montana Sheep Institute

Most land managers agree that the spread of non-native invasive plants is the primary environmental threat to western wild lands. Sheep production can yield other products in addition to food and fiber. It can provide land managers an alternate tool in their fight against invasive plants that is more economically feasible and environmentally sensitive when compared to traditional weed control methods. Sheep grazing as a vegetative management tool represents the only economically and environmentally sound alternative to address large infestations of invasive plants. The Montana Sheep Institute is demonstrating that controlled sheep and/or goat grazing is effective in managing established infestations of many of these non-native weeds. However, widespread adoption of

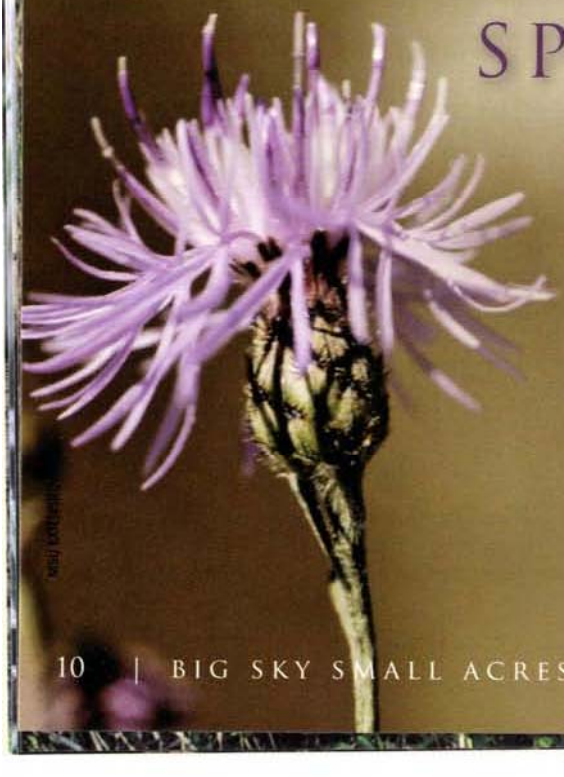
Montana entrepreneur finds weed grazing niche

(CONTINUED)

this valuable tool in the fight against noxious weeds will not occur until grazing strategies are developed and tested on large-scale infestations. Additionally, availability of sheep has limited their use as a tool in weed management projects. A sustained and profitable sheep industry must exist for this tool to be available to land managers. The Montana Sheep Institute is assisting sheep producers to reduce production costs, thereby improving the profitability of their operations. This project addresses animal husbandry, breeding and genetics, management, and wool and lamb marketing issues necessary for a healthy and viable sheep industry. Improvement of the economic status of the sheep industry will benefit Montana rural counties and communities adversely affected by the sheep industry's decline. This project represents a true partnership between Montana State University and industry stakeholders (sheep producers, county weed districts and supervisors, federal and state land managers and private land owners). For more information, please visit www.sheepinstitute.montana.edu.

Wooly Weed Eaters

Riley Wilson is gearing up for the 2008 grazing season. He and his band of weed fighters will move from job to job for five to eight months. Their job sites range from one acre to 8,000

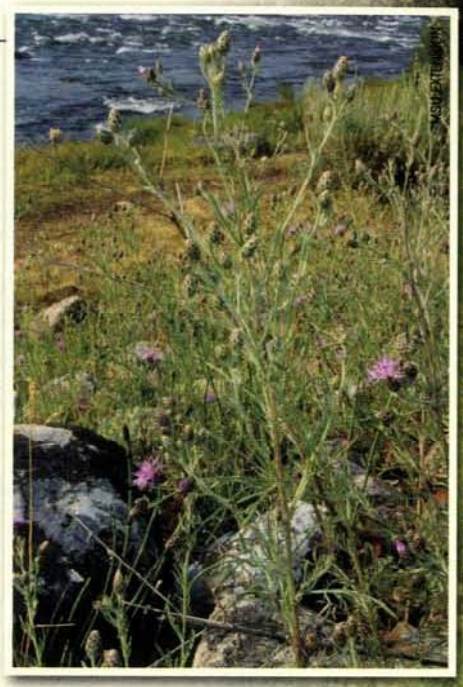


SPOTTED KNAPWEED

Centaura stobe or *Centaurea maculosa*

The Problem

Encroachment of non-native plants is the single most serious threat to natural habitats in the West. In many areas, these aggressive invaders are competing with native plants for soil and water resources, and the landscape is paying the price. If unchecked, these non-native weeds quickly displace native grasses and forbs and, as a result, alter ecosystem function. Because of their superior competitive abilities, many of these non-native weeds such as knapweed are displacing native plant species in relatively pristine wild lands as well as many of the nation's grazing lands. These non-native plants overrun and destroy grazing lands for livestock, costing agriculture millions of dollars, degrade wildlife habitat and wildlife-associated recreation, decrease landscape plant diversity, threaten native plants and reduce land values. Invasive plants such as spotted knapweed infest millions of acres of



acres. However, their typical sites are mostly small tracts of land that are less than 200 acres.

Wilson typically uses yearling sheep. "They are easier to move and require less water when compared to ewes and their lambs. Yearlings handle the stress of transportation better as well," says Wilson. He utilizes electric fencing to contain his sheep in a target area. Most landowners or landowner associations are looking for weed control. There are some larger job sites that are looking for vegetation control. Using sheep for vegetation control decreases potential fuel for wild land fires. "Many of my clients or patients, as I like to call them, own expensive homes and want to plan for the what ifs," Riley explained. Wilson charges his clients about $2.50 per sheep per month, depending on the distance to the project, size and constraints of the project.

Each year prior to the grazing season Wilson contacts the landowner(s) and charts out a plan of action. He decides how many sheep are needed, how long the sheep will stay on the project, and the desired degree of weed or vegetation removed. Once Wilson's grazing season is over, the planning process begins all over again. Riley maps out which jobs he will work again and which he won't come back to again.

Wilson is facing many of the same challenges that small business owners are facing in the West. The rising cost of fuel is having a large impact on the cost of doing business. The sheep are trucked from location to location. Trucking charges have increased proportionally with fuel costs. Riley also has to maintain his electric fencing system so it is working properly to keep his employees happily munching on the right weed or vegetation. Consequently, Wilson reevaluates what he charges his clients periodically to reflect increased costs.
Riley Wilson can be contacted at (406) 685-3342 ■

For more information, contact Lisa Surber, Montana Sheep Institute, (406) 994-2093, lmsurber@montana.edu

farm and public land in 26 northern states. During the past 80 years, noxious weeds have infested about 8 million acres in Montana (about 9 percent of the state). Knapweed alone costs Montana an estimated $42 million. Large established weed infestations are difficult to impossible to manage. The cost of traditional weed control practices (e.g. herbicides) often exceeds the benefits returned. In many cases, traditional control may even exceed the original cost of the land.

Description

Spotted knapweed is a biennial or short-lived perennial plant that grows from 1 to 4 feet tall. It reproduces by seed and has a thick taproot. A single flowerhead is produced at the end of each branch. Bracts at the base of the flowerhead are black-tipped, which gives them a spotted appearance when viewed from a distance. The flowers are pink to light purple in color and mature into brown seeds tipped with a plume of soft tawny bristles.

Management Guidelines

Sheep and goats readily graze spotted knapweed, considered to be moderately good forage for livestock. Sheep tend to strip leaves and avoid the fibrous stems of mature plants. Grazing can reduce plant vigor, density, size, flower stems and seed production. It may be necessary to manage grazing based on degree of utilization of desirable species. Palatability may be reduced as the plant ages because of reduced forage value and the presence of a bitter-tasting compound called cnicin. Sheep digestive systems may suffer if diets are composed of more than 70 percent spotted knapweed. Grazing is most effective when combined with other control methods.

More detailed information on targeted grazing of spotted knapweed is available at http://www.cnr.uidaho.edu/rx-grazing/Handbook.htm ■

WINTER livestock management

by Virginia Knerr, County Agricultural Extension Agent, MSU/Broadwater County Extension Service

Winter can be a rough weather time for Montanans. Fortunately, most of us can stay inside where it's warm and not have to worry about having food and water. Livestock, on the other hand, don't have it so easy.

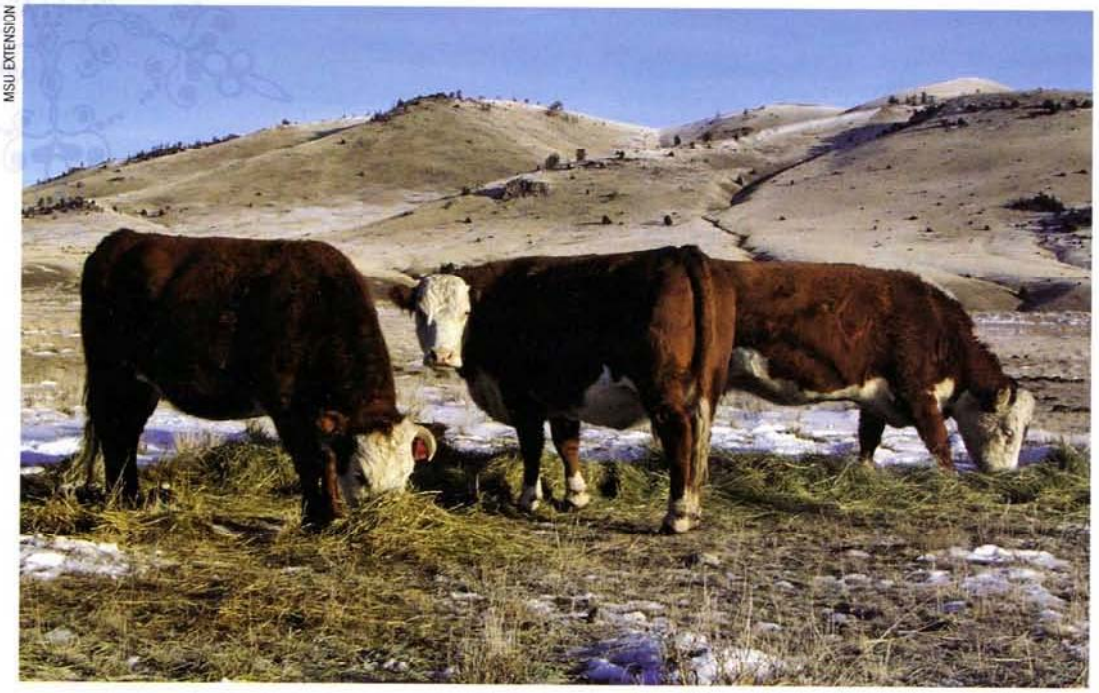
The absolute worst weather for any kind of livestock is freezing rain. Snow is not a problem if it's dry. Cold weather is not a problem if the sun is shining. It's all a problem if the wind is blowing. Animals that have no shelter from wind or wet conditions require up to 30 percent more feed per day than those animals that have access to a windbreak or three-sided shed. In the case of beef cattle, a heavy winter coat will provide protection against temperatures as low as 18 degrees Fahrenheit. At temperatures below 18 degrees the animal is stressed and starts to require additional feed to maintain body temperature. Exposure to winter winds increases the need for additional feed.

The biggest thing for livestock owners to remember is that livestock need water, or they won't eat. Maintaining proper water intake is extremely important, even in cold weather. Remember that breaking ice on a pond or creek once or twice a day may not be enough, and even if the water hole is open, some animals may not drink if the water is too cold. If possible, supply water that has been warmed up to at least 37 degrees Fahrenheit to ensure adequate intake. When using tank heaters, be sure to watch for hidden problems such as stray voltage. Nebraska research has indicated that any amount of AC current above 3–4 volts will decrease water intake. Water is the most important nutrient in any weather.

After the need for water is realized, livestock owners have to remember that livestock require more energy to make it through the winter months. More energy means additional high-quality forages and grains. High quality forage rations actually provide more heat for livestock. Long stemmed forages keep the rumen active, which in turn provides heat for the animal.

An animal's need for nutrients goes up as the temperature drops, especially if they get wet and then it gets cold. In general, it is recommended to have a supply of feed available to get livestock through times when the roads may be closed due to snow, ice, etc. Livestock in isolated areas need to have at least a week's supply of feed available.

Horses, on the other hand, have only one stomach. Because of this they must eat small amounts often. Horses must also chew their feed well before swallowing and so will take longer over their feed than will cattle and other



MSU EXTENSION

MSU EXTENSION

ruminants. Also, horses are unable to digest low quality feeds as efficiently as ruminants, and should be given only good quality feeds.

Another important aspect of winter livestock management is knowing the body condition of your animals. Horses in less than moderate condition will find it much harder to stay warm, because they won't have the insulation. Their energy requirements will be higher. Livestock owners should start trying to increase body score in October before severe winter weather hits. One body condition score will change the feed requirements dramatically.

It is important to manage the level of internal parasites, because that is a way to reduce stress. A lot of animals may have bad body condition because of internal parasites.

When caring for animals in times of weather stress, remember that animals have a much better tolerance for cold than humans do. For example the comfort range for cattle is somewhere between 40 and 70 degrees Fahrenheit. Horses have a wider range, from about 10 to 80 degrees Fahrenheit. Hogs housed in confinement usually are fine unless there is a power outage and that requires auxiliary power until electrical service is restored.

If you have a 20-degree day and the wind is not blowing, most animals ought to be outside. There are fewer problems outside than inside, with ventilation and associated barn humidity.

With proper management, livestock owners should sail through the winter months with relatively no problems. Prevention and attentiveness to each situation are key elements to a successful winter on the farm. ■

The Importance of Water

Maintaining ample water intake is the most critical part of ensuring the health of your horse during cold weather. The horse prefers a water temperature of 45° to 65°F. Under normal conditions, the horse will consume one gallon of water per 100 pounds of body weight per day. A 1,100-pound horse will consume 10 to 12 gallons of water daily. As the water temperature decreases, the horse will consume less water. The same 1,100-pound horse may consume as little as 1 to 3 gallons of water daily when water temperature is 32°F.

Low water intake is directly related to the increased incidence of impaction colic. Water intake can be encouraged by increasing the amount of forage being fed prior to a drop in temperature. The resulting increase of dry matter encourages the horse to drink more water.

For more information, contact Virginia Knerr, Montana State University Broadwater County Extension, 406-266-9242, acxvk@montana.edu

PREPARING YOUR GAME
after the hunt

by Jodi Pauley, MSU Powell Co. Extension Agent

Hunting season has arrived. While for many hunters the allure of "the hunt" is the primary focus of the season, health experts agree that the nutritional benefits of wild game are also well worth acknowledging. Without a doubt, when wild game or birds are harvested in a safe manner and care is taken both in the field and in the kitchen to maintain good food safety conditions, this meat can be both a nutritious and a tasty addition to your menu.

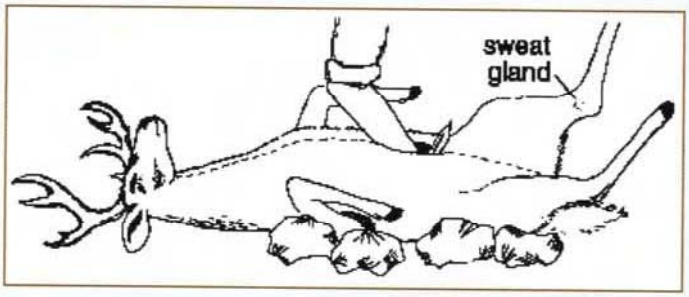
While all meats are a great source of protein, iron and B-vitamins, wild game has the added benefit of being low in fat. The natural flavor of wild game meat varies among species and is largely related to the animal's diet. However, if an undesirable strong 'gamey' flavor is the most predominant one, likely the handling and preparation of the animal between the field to the plate was not done correctly.

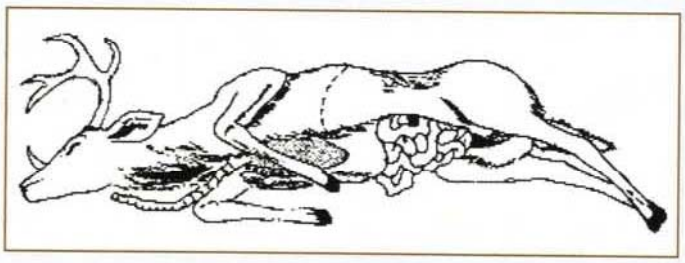
Before heading out it is important to have:

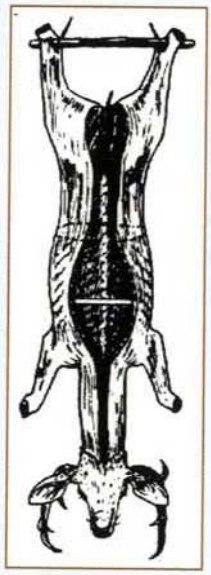
- A sharp knife
- Game saw to cut the pelvis, brisket and legs
- 20 feet of ¼ inch nylon rope to drag or hang the animal.
- Surgical gloves and a cloth to wipe out the dressed carcass
- A plastic bag for heart and liver
- Game bags if the animal is skinned.

Once the animal is down and you are sure that it is dead, it is important to bleed and eviscerate (removing of entrails) right away. To do this:

1. Place the animal on its back with the hind-end elevated and spread the hind legs. Support the carcass in position by placing rocks or sticks on each side.
2. Cut along the midline of the belly from the breastbone to the anus. Avoid cutting into the paunch and intestines by using the handle of the knife and the heel of your hand to crowd the guts away. Cut around the anus, loosening the bung so it will come out with the guts. Be sure to leave evidence of sex attached naturally to the carcass.
3. At this point, elevate the front end to cut the diaphragm free from the rib cage by cutting through the white tissue attached to the rib cage. Be very careful not to puncture the paunch when cutting the diaphragm near the ribs and spine.
4. Reach forward to cut the windpipe, gullet and blood vessels at the base of the throat and pull the lungs, heart and guts out of the animal.
5. Hang the carcass to drain and clean out the cavity of excess blood and any other contaminants with snow or water and prop open with a sharp stick to ensure air circulation to cool out the carcass. For areas where hanging isn't practical, consider draping the carcass over a large sagebrush with the back to the sky and four legs splayed to facilitate drainage.





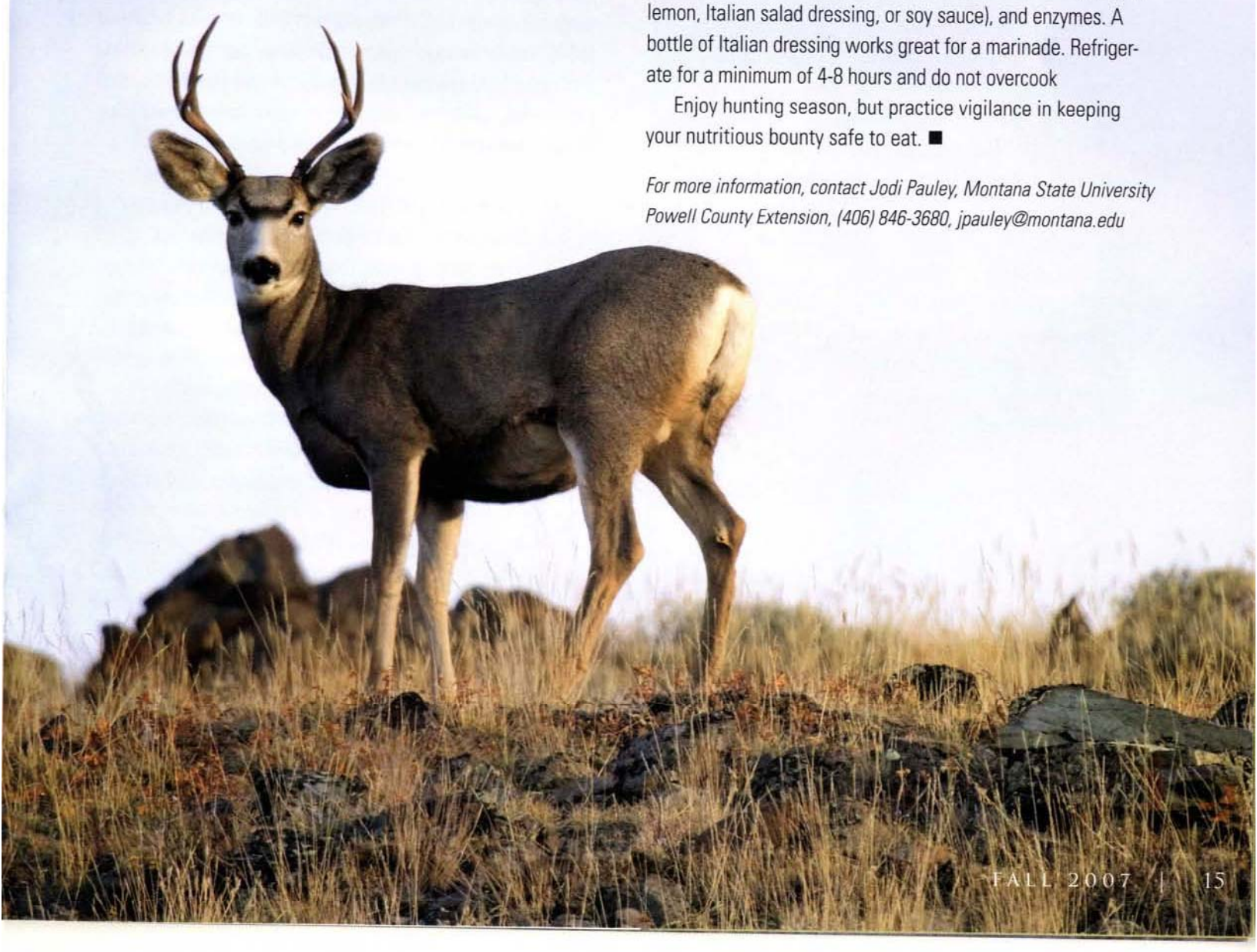


Improper temperature is meat's worst enemy. The surface of the carcass may be contaminated with bacteria that can spoil the meat unless chilling stops the growth. During warm hunting seasons, special care should be taken to keep the carcass cool. If the weather is over 40°F, it is strongly recommended that the carcass be taken to a cooler the day of the kill. Filling the cavity with bags of ice will also enhance cooling. To aid cooling in warm weather, the animal may be skinned if you have provisions to keep the carcass clean. Use ground pepper and cheesecloth or light cotton bags to protect the skinned carcass from contamination by flies. In cool weather (28 to 35°F), wrap the carcass or quarters in a sheet and hang to chill in a ventilated shed. It always a good idea to clean the carcass of all debris, dried blood, and the occasional loose hair when you hang it rather than wait until you processes it into packaged meat. Do not allow the carcass to freeze. Freezing may toughen the meat. If meat is chilled to less than 60° Fahrenheit before rigor mortis has occurred the result is "cold shortening" and can result in extremely tough meat.

When cutting meat for freezing make sure to use clean knifes, clean packaging material and properly label packages with cuts and dates and freeze promptly. Game meats are often drier and sometimes less tender than meats of domestic animals. Trim the excess fat from all of your game meat cuts as it can add to an 'off' flavor and removing it is important. Game meat should not be overcooked; however it should be cooked adequately for safety to 165°F. Marinating is a way consumers can improve tenderness and add taste variety to the meat. The basic ingredients of a marinade include salt, acid (vinegar, lemon, Italian salad dressing, or soy sauce), and enzymes. A bottle of Italian dressing works great for a marinade. Refrigerate for a minimum of 4-8 hours and do not overcook

Enjoy hunting season, but practice vigilance in keeping your nutritious bounty safe to eat. ■

For more information, contact Jodi Pauley, Montana State University Powell County Extension, (406) 846-3680, jpauley@montana.edu



MAINTAINING THE HOME PLACE TO

protect water quality

by Joe Meek, Montana Department of Envirionmental Quality

Where does your drinking water come from? If you are like most of us in Montana, it comes from a well right outside the house in the yard somewhere. So, it is important to protect the water quality. It is especially important if we live in an area where we have just barely enough water to meet our basic needs, or if our water isn't of the highest quality to start with. Clean water has a lot of value whether it comes from a creek or the aquifer under our place, and it takes effort to maintain that value.

Since most of us get our drinking water from wells, let's start by looking right at the wellhead itself. The wellhead is typically a 6-inch steel pipe or "casing" sticking up out of the ground about 18-inches somewhere in the yard or maybe out by the garden or corral. It should have a tight fitting, insect-proof cap or seal on the top. A good seal will keep the bugs, out which is important because 1) you don't want your guests finding bug parts in their water glass, and 2) bugs can move nuisance bacteria into your well that can start growing and plug up some of your plumbing.

Next, take a look at the ground surface right around the wellhead to make sure it slopes away slightly. The dirt around the casing tends to settle in a bit over time and you don't want snowmelt or rainwater standing in puddles here, especially if your wellhead is in the corral. If there is some settling going on, bring in a little clean soil to build it up a few inches. All the ground within a couple of feet of the wellhead should be sloped away.

Now while you're standing at the wellhead, take a look around. What do you see? Do you have a shed right next to it where you store your lawn mower, garden tiller, weed whacker, along with the gasoline it takes to run all of them? It is usually best to keep fuels, lubricants, paints, thinners and the like away from the wellhead. Do you have a yard hydrant next to the wellhead? If yes, find another place to mix your herbicides or fill your sprayer. Keeping 100 feet between the wellhead and contaminants is the standard and a good rule to follow.

From the wellhead you should also consider how you manage nearby vegetation. If the area is lawn, you should be careful with fertilizers and pesticides. Apply sparingly or, better yet, not at all. It is better to have clean water than a green lawn. A few weeds aren't going to hurt anything, but if you're concerned about them, commit to doing mechanical weed control when you are within that 100-foot zone around the wellhead. Consider vegetable gardens too, since we often use fertilizers and manure along with lots of water to make things grow. Garden areas are usually best if they are kept away from the wellhead. Is 100 feet far enough? Is it overkill? These are questions that don't have hard and fast answers. Factors such as the depth to the aquifer, aquifer type, soil type and even how the well was constructed need to be considered to give more definitive answers. Use common sense and always try to err on the side of caution.

Small acreage landowners often keep livestock ranging from chickens and rabbits to horses and cattle. How we manage precipitation and snowmelt (stormwater) run-off and manure is important when trying to maintain water quality either in the nearby creek or in the underlying aquifer.

ISTOCKPHOTO.COM

Corrals or pens should be built away from the banks of surface water whether it is a stream, pond or irrigation canal. You don't want nutrient- or bacteria-enriched stormwater moving from your corral into surface water. If your corral is set up to water livestock directly out of the creek, contact the local Conservation District to learn how to build a proper water gap (drinking water access point for livestock) or consider installing an off-stream waterer. In most cases, concentrating livestock in a corral with unrestricted creek access is a recipe for trouble.

Frequent cleaning of corrals that are near streams is important to protect water quality. Move the manure to a composting location away from the stream so it can be used in the garden next year. Even if your corral isn't near a stream, you can still impact surface water or ground water. A common practice of small acreage landowners in Montana is to dump manure into small swales or coulees because we don't know what else to do with it. These swales are there as part of the natural drainage patterns and manure dumped into them will leach nutrients for years to come. A thoughtful landowner will use manure and not just consider it to be a nuisance waste material.

Corrals should also be managed to protect ground water quality. Frequent cleaning to move manure to compost piles, making sure rainwater doesn't make large puddles in the corral, and keeping excess run-off from crossing the corral area are actions you can take to minimize the infiltration of nutrient rich run-off into the underlying aquifer.

Protecting your drinking water is important and requires a little planning and a little effort. You can find more information by contact your MSU County Extension agent. You might also want to pick up a copy of Tips on Land & Water Management for Small Farms & Ranches in Montana. This guide provides basic information and ideas for managing your land. A valuable list of contacts concerning regulations or management questions is included. This guide is available from the Conservation Districts Bureau at the Department of Natural Resources and Conservation 406-444-6667. ■

For more information, contact Joe Meek, Montana Department of Environmental Quality, (406) 444-4806, jmeek@mt.gov

ask stewart

Stewart:

Recently the county bladed the county road that runs by our house. It seems that there are several weeds poking up everywhere where the ground was disturbed. Otherwise, my property looks like a native prairie. Since I don't have a weed problem, do I have to purchase a weed sprayer, or can I borrow one? In addition, I have noticed a number of tumbleweeds in the fences along the county road right of way. Who is responsible for clean up?

—Joe, Helena Montana

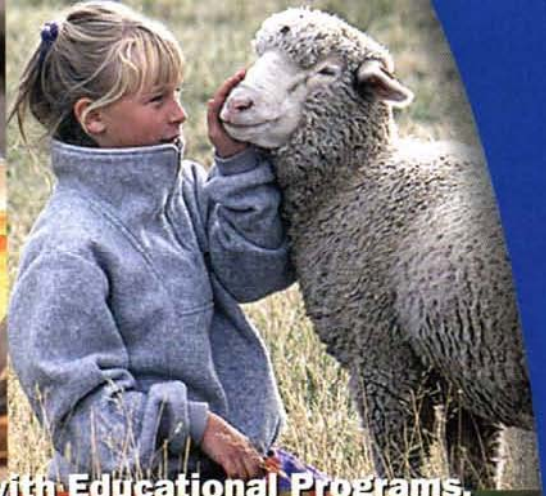
Dear Joe:

I commend you for wanting to control the weeds before they spread to your entire property. If those are the only weeds on your property, you can definitely borrow a weed sprayer. I would caution you from borrowing it from a neighbor. The chemicals that your neighbor used last may be for broadleaf weeds, and the weeds that you maybe trying to kill could be grasses or vice versa. Your local weed district may have a weed sprayer that you can rent. Usually, the rent is associated with a nominal fee. I would also recommend purchasing a small sprayer. A backpack sprayer will cost between $50-$100, but will be well worth the investment.

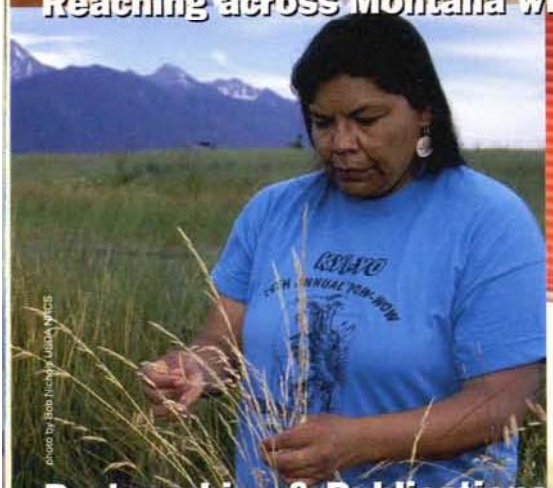
Fences along county roads are the responsibility of the respective landowner. While the county is in charge of maintaining the county road and it's right-of-way, Montana law does not require any specific level of maintenance, which includes mowing. Counties are only required to control noxious weeds, not the "obnoxious" weeds like tumbleweeds, kochia, etc. If the tumbleweeds are located on the landowner side—it is their responsibility. Unfortunately, there is no enforcement of tumbleweeds blowing into fences—whether it be your neighbors fence that yours have blown into or your fence that your neighbors have blown into.

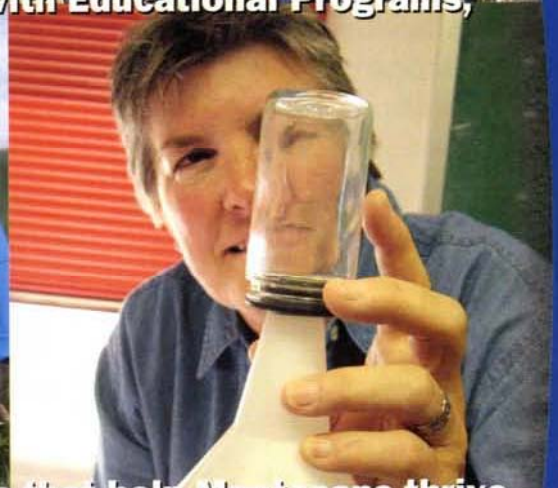
Here are a couple of suggestions:

- Organize a community ditch cleaning day in the spring. It could be a community event with a barbeque and such. Pile the tumbleweeds and burn them, but make certain you have the proper burn permits.
- Decide as landowners and neighbors that the person owning the fence will ensure that the tumbleweeds are out of it prior to a given date each year. The landowners may agree to this. If too many tumbleweeds get lodged in a fence, the weight of them can tear a fence down. ■

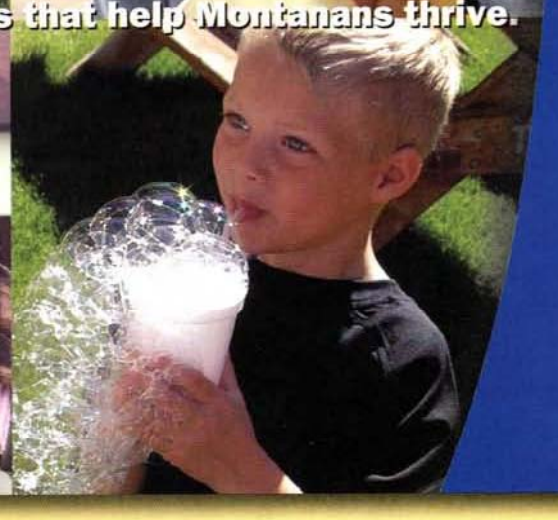


Reaching across Montana with Educational Programs,





Partnerships & Publications that help Montanans thrive.



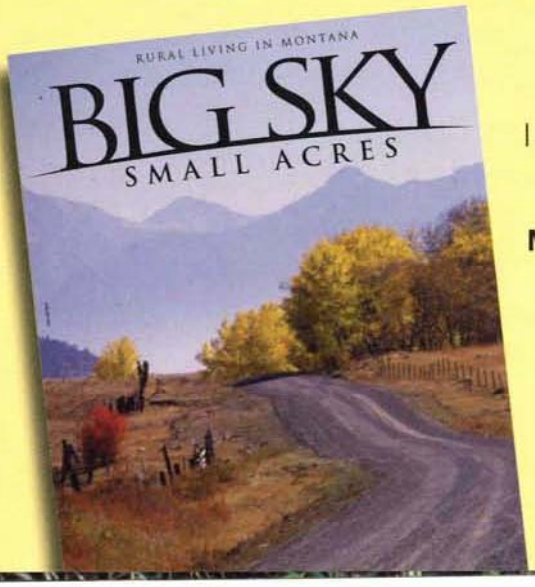
Explore YOUR MSU Resource.

"Our commitment to educational outreach comes from understanding Montana challenges.

Our passion comes from living them."

MONTANA STATE UNIVERSITY EXTENSION

Explore more, at msuextension.org



subscription information

I would like a subscription to Big Sky Small Acres for: ❑ 1 year ($8) ❑ 2 years ($16)

❑ Check enclosed, payable to Montana State University.

Name _____ **E-mail** _____

Street Address _____

City _____ **State** _____ **Zip Code** _____

Mail to: Extension Communications
P.O. Box 172230
Bozeman, MT 59717-2230